SECTION 105 - REINFORCING STEEL

1. GENERAL

This work shall consist of furnishing and placing Billet Steel Bars for concrete reinforcement in accordance with these specifications and in conformity with the plans.

2. BILLET STEEL BARS

Billet Steel Bars shall conform to the requirements of the "Specifications for Billet Steel Bars for Concrete Reinforcement," A.S.T.M. Designation A615, with the following exceptions:

A. Structural grade bars shall not be used.

B. Hard-gradebars shall be used only if they conform to the bend and elongation requirements of intermediate-grade bars.

3. CERTIFICATION AND IDENTIFICATION

A. Certification. Three copies of a certified mill test report shall be furnished for each lot of billet steel reinforcement bars proposed for use on this project. The mill test report shall show the following information:

1. The process or processes used in the manufacture of the steel from which the bars were rolled.

2. Identification of the heat of open-hearth, basic oxygen, or electric furnace or the lot of acid bessemer steel from which the bars are rolled.

3. Chemical and physical properties of the heat from which the bars were rolled.

B. Identification. The bars in each lot shall be legibly tagged by the manufacturer or fabricator. The tag shall show the manufacturer's test number and lot number or other designation that will identify the material with the certificate issued for that lot of steel.

The fabricator shall furnish three copies of a certification which shows the heat number or numbers from which each size of bar in the shipment was fabricated.

There shall be no evidence of piping or visual flaw on the sheared ends of the bars.

4. PROTECTION AND STORAGE

Reinforcing steel shall be protected at all times from damage. Reinforcing steel shall be stored above the ground on platforms, skids, or other supports. It shall be stored in such a manner and adequately marked to facilitate inspection and checking. When placed in the work, the reinforcing steel shall be free from dirt, detrimental scale, paint, oil, or other foreign substance.

5. CUTTING AND BENDING

All cutting and bending of reinforcement bars shall be done by competent workmen and with equipment approved by the Engineer. All reinforcement bars shall be bent cold. Unless shown otherwise on the plans or unless written approval is obtained from the Engineer, all reinforcement bars shall be cut and bent in the fabricating shop before shipment to the project.

6. PLACING, SUPPORTING, AND FASTENING

All reinforcing steel shall be accurately placed and, during the placing of concrete, firmly held by approved supports in the position shown on the plans. Reinforcing bars shall be securely fastened together. Reinforcement placed in any member shall be inspected and approved before any concrete is placed. Laying or driving bars into the concrete after placement will not be permitted. The use of small stones or concrete or wood blocks for supporting reinforcement will not be permitted. The reinforcement shall be held securely in place at the proper position and spacing as indicated on the plans by the use of wire ties at bar intersections and tying to the supports and spacers. The adequacy of the supports and ties to secure the reinforcement properly shall be subject to the approval of the Engineer.

7. SPLICING

Wherever it is necessary to splice reinforcement at points other than those shown on the plans, drawings showing the location of each splice shall be submitted to and approved by the Engineer before the reinforcing steel is ordered. Splices shall be avoided at points of maximum stress. Unless otherwise shown on the plans, bars in the bottom of beams and girders and in walls, columns, and haunches shall be lapped a minimum of twenty (20) diameters; and bars near the top of beams and girders having more than twelve (12) inches of concrete under the bars shall be lapped a minimum of thirty-five (35) diameters to make the splice.